

What is Claimed is:

1. A low profile antenna, comprising:

an antenna; and

a ground plane structure operatively associated with the antenna, the ground

5 plane structure comprising:

a generally planar surface;

at least one protrusion extending from the planar surface; and

a dielectric substrate supported by the planar surface, the dielectric

substrate comprising a relative permeability (μ) of greater than or equal to about one

10 and a relative permittivity (ϵ) of greater than or equal to about one.

2. The antenna of claim 1, wherein the at least one protrusion comprises:

a plurality of pedestals; and

a plurality of posts interconnecting each of the pedestals and the planar

surface;

5 wherein the dielectric substrate extends between the planar surface

and the pedestals.

3. The antenna of claim 2, wherein:

the plurality of pedestals are disposed about the antenna;

the antenna extends in a direction that is generally parallel to that of the planar surface; and

5 the dielectric substrate further extends between the antenna and the planar surface.

4. The antenna of claim 3, wherein each of the pedestals comprise a generally hexagon outer configuration.

5. The antenna of claim 4 wherein the antenna comprises a fractal antenna having a generally triangular outer configuration.

6. The antenna of claim 1, wherein a thickness of the dielectric substrate is less than one-half wavelength of a signal input to the antenna.

7. The antenna of claim 1, wherein the dielectric substrate comprises a permeability (μ) that is in the range of between about one and about one hundred.

8. The antenna of claim 1, wherein the dielectric substrate comprises a permittivity (ϵ) that is in the range of between about one and about one hundred.

9. The antenna of claim 1, wherein the dielectric substrate comprises ferrimagnetic material.

10. The antenna of claim 9, wherein the ferrimagnetic material comprises magnesium ferrite.